Institute Profile
The Fraunhofer Institute for Solar Energy Systems ISE is committed to promoting energy supply systems which are sustainable, economic, safe and socially just. It creates technological foundations for supplying energy efficiently and on an environmentally sound basis in industrialised, threshold and developing countries. To this purpose, the Institute develops materials, components, systems and processes for the following business areas: energy-efficient buildings, applied optics and functional surfaces, solar thermal technology, silicon photovoltaics, alternative photovoltaic technology, renewable power generation and hydrogen technology. With activities extending well beyond fundamental scientific research, the Institute is engaged in the development of production technology and prototypes, the construction of demonstration systems and the operation of testing centres. The Institute plans, advises, tests and provides know-how and technical facilities as services. Fraunhofer ISE has been certified according to DIN EN ISO 9001:2000 since March, 2001.

Research and Services Spectrum
The Fraunhofer Institute for Solar Energy Systems ISE is a member of the Fraunhofer-Gesellschaft, a non-profit organisation, which occupies a mediating position between the fundamental research of universities and industrial practice. It conducts applications-oriented research to benefit the economy and society at large. Fraunhofer ISE finances itself to more than 90 percent with contracts for applied research, development and high-technology services. The working method is characterised by its clear relevance to practice and orientation toward the wishes of the client. The Institute is integrated into a network of national and international co-operation. Among others, it is a member of the ForschungsVerbund Erneuerbare Energien (FVEE – German Research Association for Renewable Energy) and the European Renewable Energy Centres (EUREC) Agency. The Institute can draw on expertise from other Fraunhofer Institutes, so that complete interdisciplinary solutions can be offered.

Networking within the Fraunhofer-Gesellschaft
- member of the Fraunhofer Alliances for “Building Innovation”, “Energy”, “Nanotechnology”, “Optic Surfaces” and “Water Systems” (SysWater)
- member of the Fraunhofer Electromobility Systems Research project
- member of the Fraunhofer Group “Materials, Components” (materials research)

International Clients and Co-operation Partners
The Fraunhofer Institute for Solar Energy Systems has co-operated successfully for years with international partners and clients from a wide range of business sectors. A list of our national and international partners can be found under www.ise.fraunhofer.de/about-us/our-partners.

External Branches and Co-operations
The Fraunhofer ISE Laboratory and Service Centre LSC in Gelsenkirchen, in the State of North Rhine-Westphalia (NRW), was founded in 2000. It serves as a partner for the photovoltaic industry also beyond the borders of NRW. Solar cell manufacturers draw on the services of LSC for quality control of their production and for rapid solutions to problems in their processing lines. The services offered by the Laboratory include the simulation and optimisation of in-line processes, the development of new processes and structures for solar cells as well as research on large-area heterojunction solar cells of amorphous and crystalline silicon. LSC Gelsenkirchen provides training sessions on characterisation procedures and solar cell technology as well. In 2010 the facility celebrated its tenth anniversary. On this occasion a new laboratory for large-area silicon heterojunction solar cells and silicon thin film solar cells was inaugurated (see report p. 74).

The Fraunhofer Centre for Silicon Photovoltaics CSP in Halle/Saale was jointly founded in 2007 by the Fraunhofer Institute for Mechanics of Materials IWM, Freiburg and Halle, and the Fraunhofer ISE. Fraunhofer IWM contributes its expertise in the area of optimisation and evaluating silicon process technolo-
logies and module integration. Fraunhofer ISE’s competence lies in the manufacture of materials, solar cell and module development as well as characterisation (see report p. 58). The central facilities are presently Reliability and Technologies for Grid Parity (CSP-ZTN) and the Laboratory for Crystallisation Technology (CSP-LKT). On 1 October 2010, the foundation stone was laid for Fraunhofer CSP’s new building.

The Technology Centre for Semiconductor Materials THM in Freiberg, Saxony, is a co-operation between Fraunhofer ISE and the Fraunhofer Institute for Integrated Systems and Device Technology IISB in Erlangen. THM supports companies through research and development on materials preparation and processing of 300 mm silicon, solar silicon and III-V semiconductors. Beyond this, THM offers services in the fields of analytics, characterisation and testing to assist industry partners in their ongoing production.

The Fraunhofer Center for Sustainable Energy Systems CSE in Boston was founded in 2008. At Fraunhofer CSE, the expertise and technology in the field of renewable energy that is already established in Europe is to be further adapted and introduced to the United States market. Together with the Canadian Standards Association (CSA) and the VDE Institute for Testing and Certification, the Fraunhofer CSE set up a test facility for PV modules in 2010. The facility, called the CFV Solar Test Laboratory, is located in Albuquerque, New Mexico. Further information about Fraunhofer CSE can be found on page 10.

The financial structure of the Fraunhofer-Gesellschaft distinguishes between the operational and investment budgets. The operational budget includes all expenses for personnel and materials, as well as their financing with external income and institutional funding. In 2010 our operational budget totalled 53.2 million euro. In addition to the expenditure documented in the graph, the Institute made investments of 8.4 million euro in 2010 (not including investments for building construction and the economic stimulus programme).